

Multi-Slice Network Processor

ABSTRACT

A multi-slice network processor processes a packet in packet slices for transfer over a multi-port network interface such as a switch fabric. The network processor segments a packet into cells having a target size. A group of cells of a common packet form a packet slice which is independently processed by one of a number of parallel processing and storage slices. Load balancing may be used in the selection of processing slices. Furthermore, the network processor may load balance slices across the multi-port network interface to one or more destination slices of another network processor. The multi-slice processor uses post header storage delivery on ingress processing to the multi-port interface thereby reducing temporary storage requirements. The multi-slice network processor may also utilize sequence numbers associated with each packet to ensure that prior to transmission onto a destination network, the packet is in the correct order for a communication flow.